

# LA NIÑA CONVERSATION GUIDE

For many Australians, the Summer of 2021-22 is a little different. Instead of the dry, hot and bushfire-y conditions we often experience, most of the east of Australia is experiencing a wet and wild Summer, influenced by a La Niña event.

So, **how do we explain that climate change is happening here and now when the summer is wetter than usual?** It can be a challenge, but we can't forget that the weather we experience day to day is happening in a warmer climate, due to burning fossil fuels.

We've produced a handy conversation guide to arm you with the facts when chatting about climate change this summer.

## SO, WHAT SORT OF WEATHER ARE WE IN FOR THE REST OF SUMMER?

We can expect above-average rainfall for the eastern parts of the continent, including most of our large towns and cities. This raises the flood risk, especially as catchments are saturated after several months of above-average rainfall.

Not everywhere will be wet though, with much of the centre and west of Australia expecting around average or even below average rainfall. Most of Australia, except in parts of the southeast, should expect above average maximum summer temperatures. The risk of extreme heat waves, drought and bushfires this year is similar to the long-term average.



For more detail on the wet and stormy Summer ahead and the role La Nina will play, check out our latest explainer: *'Steamy and Stormy: Climate Change and Summer 2021-22'*



## HUH? I THOUGHT CLIMATE CHANGE MEANS HEATWAVES, DROUGHT AND BUSHFIRES ARE BECOMING WORSE?

That's right! With every fraction of a degree of global warming, our extreme weather events are becoming just that - more extreme. That's because all weather events are now occurring in an atmosphere that is warmer, wetter and more energetic. This means heatwaves are becoming hotter, lasting longer and occurring more frequently, bushfires seasons are becoming more dangerous and lasting longer, and droughts are increasing in frequency and severity in some regions.

When it comes to rainfall, globally we are seeing slightly more rainfall overall, because a warmer atmosphere holds more water. Though the pattern is not even and some regions, including most of the south of Australia are becoming drier. At the same time, we are getting more rainfall in the form of intense downpours, punctuated by prolonged dry spells.

In other words, with climate change, much of Australia is experiencing both greater risk of drought and greater risk of extreme downpours and flooding. Some years, especially if we have the influence of a La Niña, will be at the wetter and stormier end of the spectrum rather than the dry and hot end. It's all happening within an overall trend of rising global temperatures and increasingly extreme weather due to the burning of fossil fuels.

## RIGHT... SO WHO'S THIS LA NIÑA THEN? AND WHAT'S SHE GOT TO DO WITH THE CLIMATE?

La Niña is an oceanic and atmospheric phenomenon - the colder sister of El Niño - and one phase of the El Niño Southern Oscillation. The El Niño Southern Oscillation is one of a number of short-term and cyclical 'climate drivers', that are fluctuations in ocean surface temperatures and ocean-atmosphere interactions that affect the temperature, rainfall and other weather patterns.

La Niña happens when trade winds across the equatorial Pacific become stronger; bringing cooler water up from deep in the ocean. This results in a cooling of the surface of the central and eastern tropical Pacific Ocean. The stronger winds also help warm surface water in the western Pacific and to the north of Australia. These warmer waters in the western Pacific mean more clouds develop as warm, moist air rises. This can cause heavy rainfall to the north of Australia.

How climate change influences the El Niño Southern Oscillation, including the frequency and intensity of La Niña events, is one of the more complex areas of climate science. Some models suggest that both El Niño and La Niña events will become more intense. Others project an overall weakening.

But importantly, all our weather is occurring in a warmer and wetter atmosphere. The greater risk of floods and severe storms experienced during a La Niña is being supercharged by climate change.

## PHEW, WE'RE IN THE CLEAR FOR BUSHFIRES THIS SUMMER THEN?

Well, not exactly. It depends where you are. Recent rains have seen lots of grass growth in some areas, meaning greater risk of grass fires. This is particularly the case for much of inland New South Wales.

Sorry to bear bad news, but the current La Niña conditions are also creating fuel for the next severe bushfire season.

## WHAT CAN I SAY TO MY CYNICAL FAMILY MEMBERS AND FRIENDS TO HELP THEM UNDERSTAND HOW THE CONDITIONS THIS SUMMER RELATE TO CLIMATE CHANGE?

Thanks to climate change, we're now dealing with a climate system on steroids. Basically, all our weather events are now occurring in an atmosphere that is warmer, wetter and more energetic, due to climate change. The more we add to it, by continuing to emit greenhouse gases into the atmosphere, the worse it will get on both ends of the spectrum from bushfires to floods.

## EKK, THIS IS A BIT GRIM! ARE THERE ANY SOLUTIONS I CAN OFFER UP WHEN CHATTING ABOUT THIS TO MY FAMILY?

We know that climate change and its impacts can be scary things to talk about so it's important to talk about the solutions as well - and there are many!

The simplest thing we need to do is reduce our emissions to net zero as quickly as possible. You've probably heard people talk about net zero by 2050. Unfortunately, that's too late. We need to take action to drastically reduce emissions this decade! The science is clear that emissions have to be cut by at least 75% by 2030, with an aim to get to net zero by 2035.

And the easiest way to do this is for countries to stop burning fossil fuels like coal, oil and gas, and instead, use renewable energy like solar and wind. Luckily for Australia, we are the sunniest and one of the windiest countries in the world, so we stand to benefit hugely from a rapid transition to renewables!

